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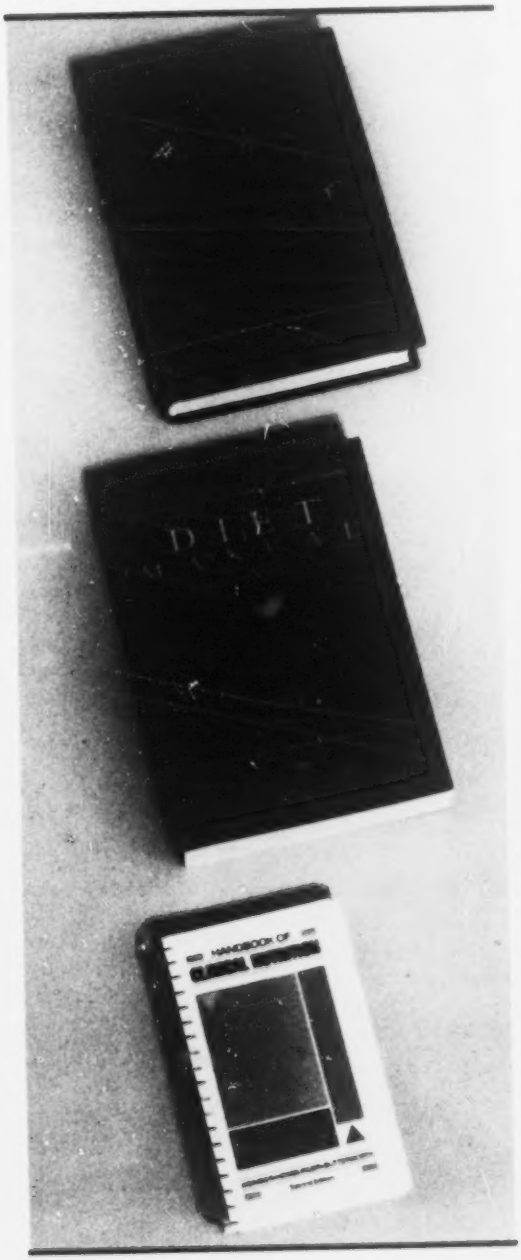

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JOHN A. GRONVALL, M.D.

The VA's Affiliation with Academic Medicine:
An Emergency Post-War Strategy Becomes a Permanent Partnership

Abstract—The creation of a cabinet-level department for veterans' programs is an occasion to review medical care of American military veterans, which dates back to colonial times. To meet the medical care crisis caused by large numbers of returning World War II veterans, the Veterans Administration (VA) entered into affiliations with U.S. medical schools, a partnership that provided physicians for veterans and allowed residents to complete graduate medical education. Increasing medical care needs of veterans of World War II and successive conflicts, and legislatively expanded entitlements, have contributed to sustained growth of the VA workload—which in turn has led to an expanded partnership with schools of medicine and allied health sciences. The affiliations continue to serve both partners well and to contribute substantively to society at large by fostering the production of medical manpower and advances in biomedical research. *Acad. Med.* 64(1989):61–66.

Passage of legislation to elevate the Veterans Administration to cabinet level makes this an appropriate time to reflect on the origins of the VA's hospital system and on the role the VA has played in American medicine through the affiliation partnership with medical schools and academic health centers. This new legislation, Public Law 100-527, signed by President Ronald Reagan on 25 October 1988, is statutory recognition of the extent to which VA programs have become essential components of the federal investment in health care and social support.

From the perspective gained in the 58 years since the Veterans Administration was created in 1930, two developments, spaced only 19 months apart, stand out as the underpinnings of the VA's new role, starting immediately after World War II, to help ensure that America would win the peace, as it had just won the war.

On 22 June 1944, President Franklin Delano Roosevelt signed the Servicemen's Readjustment Act of 1944, commonly referred to as the "G.I. Bill," a landmark piece of legislation that has been compared to the Homestead Act of 1862 for its impact on the development of our country's social infrastructure. The G.I. Bill established an explicit system of federal support for adult education. Although the immediate beneficiaries were the returning war veterans, who could thereby complete their higher education, the broader value to society of this investment in higher education is now well recognized.

On 30 January 1946, another VA document was signed, which remarkably expanded this concept of higher education as both a short- and a long-term investment. To take advantage of the academic environment to assist in solving the immediate medical care crisis created by the return of veterans with war-related medical problems, the VA Department of Medicine and Surgery's Policy Memorandum No. 2 established a program of affiliation between the VA and the nation's medical schools. Like the G.I. Bill, this document signaled the beginning of over four decades of a federal partnership with educational institutions, an interdependency that has benefited both partners while contributing to society at large.[1]

The VA–medical school partnership was rooted in the intention to provide a basic benefit to those who had served their country in the armed forces. It brought the country's medical schools and their residency programs into VA hospitals and thus helped guarantee quality health care to wounded, sick, and disabled veterans by providing an immediate answer to the physician-staffing dilemma VA hospitals faced. In the long term, it added significantly to the support of American medical education, provided a stable base for biomedical research, and influenced the direction of both medical education and medical practice.

Historical Development

Colonial America provided statutory benefits for veterans injured in military actions 140 years before the formation of the United States. In Plymouth Colony, a 1636 law provided that

> In case necessity require to send forces abroade, . . . that if any that shall goe returne mamed & hurt, he shall be maytayned competently by the colony duringe his life.

This concept of monetary benefits, borrowed from England, was adopted in other colonies, and was later enacted by the new nation as a federal responsibility for veterans of the Revolutionary War.

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The first U.S. governmental institutional medical care for veterans, as opposed to hospital care for active-duty military, was provided when the U.S. Naval Asylum was created in Philadelphia. This facility, which was finally opened in 1833, had been authorized by a 26 February 1811 act of Congress to "provide a permanent asylum for disabled and decrepit Navy officers, seamen and marines." Funding for both construction and operation came almost entirely from a fund created through a payroll deduction of 20¢ per month exacted from all naval personnel, initiated by federal statute in March 1799. This "prepaid closed-panel group health plan" (probably the first in America) allowed two veteran beneficiaries to enter the asylum in 1833, along with 13 navy personnel transferred from an old naval hospital.[2] This "asylum" operated both a domiciliary and a hospital, uneasily coexisting in the same building.

The U.S. Army followed later with a "military asylum" in Washington, D.C., subsequently named the United States Soldiers' and Airmen's Home, created by an act of Congress in 1851. Although this home was also primarily domiciliary, medical care and hospital care were furnished to veteran members. President Lincoln used this home as his summer White House, as did three other nineteenth-century presidents.[3]

The first veterans' homes and hospitals of truly national character came after the Civil War with the establishment of the National Home for Disabled Volunteer Soldiers (originally established as the National Asylum for Disabled Volunteer Soldiers by act of Congress in 1865). Between 1866 and 1930, 11 "branches" of the home were established across the country, with an aggregate capacity of approximately 25,000 members. At each branch, medical care and hospital care were also provided, although each was fundamentally domiciliary. These branches of the home formed the core of the VA domiciliary care program, which has evolved since 1930 to the present 27 domiciliary facilities with an aggregate capacity of 7,542 operating beds.

The most direct antecedent of the present federally operated system of veterans' hospitals was created by a 1919 act of Congress that charged the U.S. Public Health Service (PHS) with direct responsibility for operating hospitals to care for sick and disabled veterans of World War I. Appropriations were made for both the purchase of existing hospitals and the construction of others. During the fiscal year ending 30 June 1920, the PHS opened 46 hospitals (in addition to the 22 marine hospitals it was then operating) and cared for 87,000 hospitalized veterans. Because of continuing ambiguity between the other missions of the PHS and the rapidly expanding demand for veteran care, a new and independent Veterans Bureau was created in 1921. The PHS turned over to the bureau 57 hospitals (44 of them actually in operation), having an aggregate bed capacity of 17,500.[4]

This veterans' hospital program grew slowly, so that by 1930, when the modern Veterans Administration was created (by combining the U.S. Veterans Bureau, the National Home for Disabled Volunteer Soldiers, and the Bureau of Pension), there were 47 VA hospitals in operation, with an aggregate capacity of 22,700 beds.

Through the 1930s, the VA medical program grew primarily through acquisition of former military hospitals and the conversion of old soldiers' homes; there were 97 VA hospitals in operation at the end of World War II. As the war drew to a close, it was apparent that the VA's medical program was not prepared for the impending explosion of veteran patients. A 1945 *Saturday Evening Post* article said that VA hospitals were "short of doctors, nurses, beds, efficiency, and the medical spirit that gives patients faith in their doctors."[5]

President Harry S. Truman appointed the popular World War II "GI General," Omar N. Bradley, to prepare the VA for this challenge. The dimensions of the task were reflected in estimates that, within three months, the VA's 1,000 doctors would have 100,000 new patients.[6]

Among those called upon by General Bradley to confront this situation was Paul B. Magnuson, M.D., Chairman of Orthopedics at Northwestern University in Chicago. Dr. Magnuson quickly found that civil service red tape and the bad reputation of VA medicine added up to a nearly impossible recruiting situation.[7] But his medical school background convinced him that the VA's situation of "patients without doctors" could be solved through a working connection to the medical schools, which faced the problem of "doctors without patients" caused by the return of military physicians now seeking residency positions to complete their graduate medical education.

The framework for this new era of VA medicine was laid on 3 January 1946, when Public Law 79-293 formally established a Department of Medicine and Surgery in the VA. This legislation provided a new personnel system for VA physicians and dentists—a system freed from the civil service bureaucracy. The stage was now set for Magnuson's concept of affiliations between the VA and the nation's schools of medicine. The day after President Truman signed the new law, Northwestern University and the University of Illinois placed 56 residents at the VA's Edward Hines, Jr., Hospital, near Chicago. By the time the VA's Policy Memorandum No. 2 was signed at the end of the month to describe these arrangements formally, a second affiliation was in operation between the University of Minnesota and the VA's Fort Snelling Hospital, in Minneapolis. Similar affiliations were soon worked out in Boston, New York, and San Francisco.

The compelling need to expand VA medical care necessitated a massive construction program. Dr. Magnuson and VA Chief Medical Director Paul R. Hawley, M.D., quickly determined the value of selecting new hospital sites on or near campuses of medical schools. Viewing some of the VA's beautiful, but isolated, existing hospitals, Dr. Hawley said, "to hell with the scenery, I want the finest doctors."[5]

The number of VA hospitals increased dramatically, from 97 in 1942 to 151 eight years later. In the 1950s

and 1960s the increase in new hospitals was more gradual, and several outmoded older facilities were replaced. Today's total VA system of 172 medical centers was reached in the late 1970s. The VA's construction program has continued in the form of major hospital replacements and renovations, and research facilities, educational facilities, and clinics have also been constructed.

Expansions and Adjustments

Figure 1 shows that the VA's inpatient workload has increased sharply over the years, reflecting not only growing demand for care from veterans but also significant expansions of eligibility for services. This increase also reflects a major change in health care delivery in that, although there has been a great increase in admissions, the average census has declined as a result of a shortening of the length of stay. Figure 2 documents even more remarkable increases in ambulatory care; the line showing number of visits annually is annotated at points when eligibility was legislatively broadened as successive Congresses and administrations recognized the VA's role not only in caring for medical problems related to military service (the "service-connected" veterans) but also as a health care safety net for medically indigent and poor veterans.[8]

The growth in the VA workload created a direct need to expand the VA–medical school affiliation program. In addition, the consensus in the 1960s that the nation faced a physician shortage of crisis proportion also led to an expansion of the VA's role in medical education. The congressional decision in the 1960s and early 1970s that federal support should be provided for training health professionals found ready expression through the VA–medical school affiliation program. The Veterans Administration Medical School Assistance and Health Manpower Training Act of 1972 (Public Law 92-541) provided 161 grants totaling over $300 million to schools of medicine and allied health professions.

Tangible legacies of this legislation are five new state medical schools, created with the proviso that they be affiliated with VA medical centers. (The five medical schools are located at Marshall University, West Virginia; Wright State University, Ohio; East Tennessee State University, Tennessee; Texas A&M University, Texas; and the University of South Carolina, South Carolina.) On a broader scale, the legislation also greatly spurred VA support for allied health care training. Thus the VA affiliation program, which originally involved only graduate medical education, expanded to include medical students and then to span the entire spectrum of health care training.

From 16,000 trainees in 1960—most of whom were medical residents—the program expanded to 105,000 trainees from 1,000 professional schools in the academic year 1987–88. Today, 134 of the 172 VA medical centers are affiliated with 102 of the nation's medical schools.

Over 50% of all physicians practicing in the United States have received part of their education in VA hospitals. Over the last decade, the VA has funded 12% of all U.S. residency positions in the medical and surgical disciplines relevant to veterans' care (which excludes only pediatrics and obstetrics-gynecology). Table 1 documents the VA's share of all national residency training slots by discipline.

The Research Connection

The post–World War II growth of the VA research program was a direct result of the affiliation with medical schools. The overriding goal of affiliation was to upgrade the quality of patient care by adopting the academic medical care model--patient care provided by physicians who also teach and engage in research. The opportunity for VA physicians to pursue a medical research career as part of their VA responsibilities, and the availability of special research funds to support VA researchers, have enabled the VA to recruit and retain a remarkably talented patient care staff.

By design, the VA's research program is targeted to the support and training of physician investigators. At present the VA supports about one-third of all physician investigators in this country, although the VA research budget is less than 3% of the

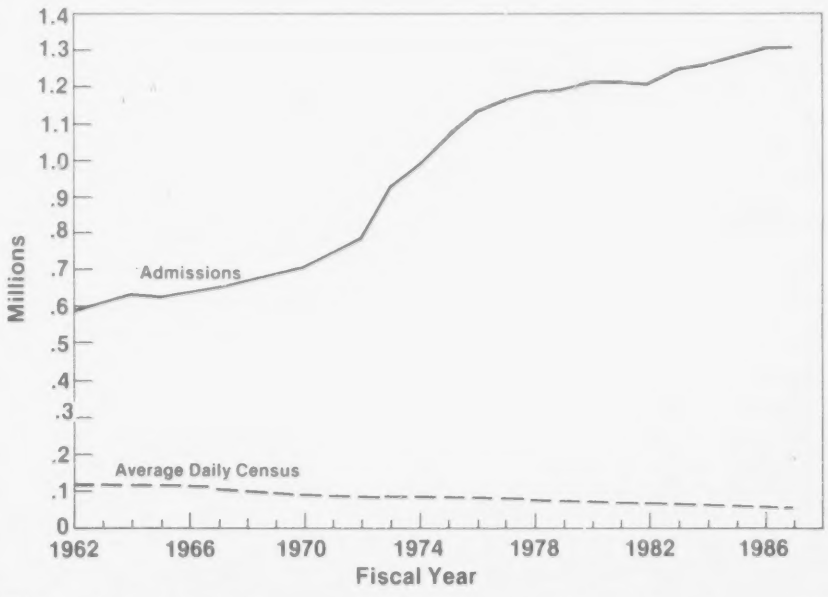

Figure 1. **Average daily census and average number of admissions to Veterans Administration, by fiscal year, 1962–1987.**

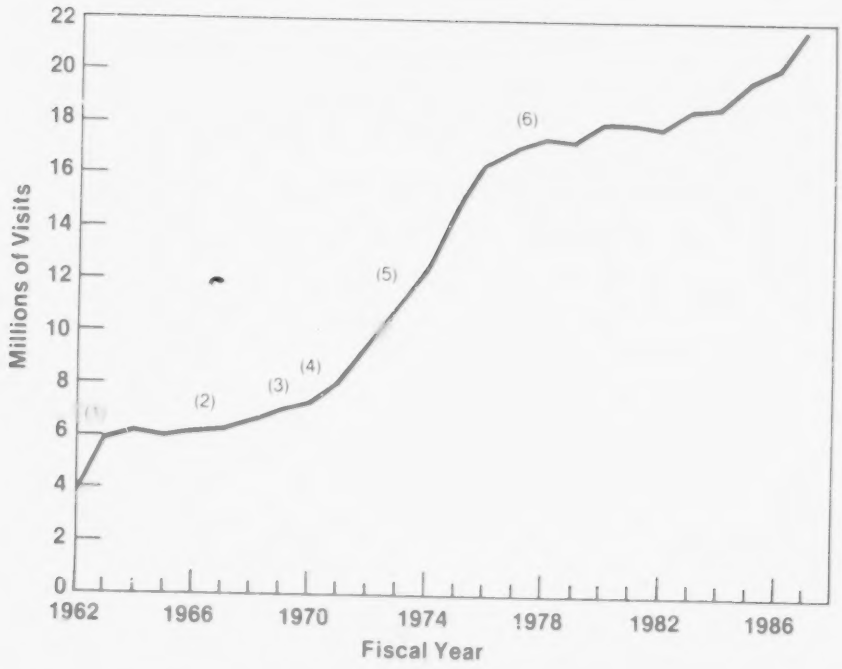

Figure 2. **Average number of ambulatory patient visits to Veterans Administration hospitals, by first fiscal year, 1962–1987. The numerals at points along the line indicate when eligibility for VA care was broadened legislatively. (1) Redefinition of outpatient services. (2) Non-service-connected hospitalization for veterans serving after 1/31/55 (PL 89-358). (3) Care of any condition for war veterans totally disabled from service-connected conditions (PL 91-102). (4) Care for veterans receiving aid and attendance allowances or who are permanently housebound; care for non-service-connected disabilities for veterans 65 years of age or older (PL 91-500). (5)Ambulatory care services to veterans eligible for hospital care to obviate need for hospital admission and to veterans with service-connected disabilities rated 80% or more; medical care for certain dependents of veterans with service-connected needs who are totally disabled or who died of service-connected conditions (PL 93-82). (6) Veterans with service-connected disabilities rated 50% or more granted outpatient medical care (PL 94-581).**

National Institutes of Health budget. Through the VA's Career Development Program, about 225 young physicians are now in training for research careers. The retention rate of the graduates of this training program is extraordinary—over 48% of all graduates remain in the VA, and another 26% are in non-VA academic positions.

In the late 1940s, the first VA research programs were built around a cooperative research study of the efficacy of streptomycin (and later other chemotherapeutic agents) in the treatment of tuberculosis. That study laid the groundwork for modern multihospital randomized clinical trials. It is significant that 40 years later the VA's Cooperative Studies Program is a major resource for testing the efficacy of antiviral agents in the treatment of acquired immune deficiency syndrome (AIDS) and related diseases.

Although clinical trials are still a significant element of the VA's research program, the majority of VA research support now goes to individual VA scientists through a rigorous peer review system. The program supports investigators in all areas of medicine, from basic science through clinical studies; but, given the VA's emphasis on physician investigators, most VA research has a clinical orientation. The VA's research program is especially strong in the areas of diabetes, immunology, mental health and dementia, infectious disease (including AIDS), geriatrics, endocrinology, and alcohol and drug abuse.

For VA physicians, the opportunity to engage in research makes it possible to participate fully in the academic medical environment. The VA's $200 million research appropriation, coupled with approximately $200 million for investigators' salaries, supports the work of a cadre of VA scientists who in addition attract about $100 million in sponsored support from non-VA sources. This $500 million research effort is a cost-effective investment to assure recruitment and retention of first-quality academic physicians and to contribute to improved diagnostic and treatment capability, not only in the VA but also in the broader medical community.

Recent Developments

The VA operates the largest health care system in the United States and, in fact, in the free world. Its extensive array of affiliations and sharing agreements with academic health centers, community hospitals, and military medical facilities has a significant effect on the practice of medicine in this country. This is especially true for disciplines that most closely relate to the special medical needs of veteran patients. The VA also serves as an element in the safety net for those who cannot afford health care. Almost 45% of the veterans hospitalized in the VA system have no health insurance coverage of any type. This is in contrast to veterans treated in non-VA hospitals, of whom only 7.8% are without insurance.[8]

Under current law, 13 million veterans have categorical entitlement to VA hospital care. Of this number, 47.6%—or 6.2 million persons—are in the low-income category (less than $15,000 per year for single persons; $18,000 if married). The VA thereby

Table 1
Percentage of U.S. Residencies in Each Specialty Supported by the Veterans Administration as of 1 September 1986 and Percentage of Change in the Numbers of U.S. Residencies Supported 1978–79 to 1988–89

Specialty	Percentage Supported 1 September 1986	Percentage Change in No. Supported, 1978–79 to 1988–89
Anesthesiology	7.2	65.9
Dermatology	16.4	−0.5
Family practice	1.1	22.4
General internal medicine	15.0	12.41
Medical specialties	*	7.6
Neurology	22.6	8.5
Nuclear medicine	33.8	5.4
Pathology	12.3	0.1
Physical medicine and rehabilitation	18.8	77.4
Psychiatry	14.4	24.6
Radiology	9.8	1.3
Surgery	11.2	6.1
Surgical specialties	13.0	4.4
Overall	12.2	11.9

*Data not available.

serves as an important source of care for veterans who have low incomes and no insurance coverage. The responsibility the VA accepts in this context removes a significant burden of uncompensated care from the medical community at large. (Comments regarding medically indigent veterans should not be taken to imply that veterans, as a whole, represent lower socioeconomic levels. Compared with their non-veteran counterparts, veterans as a class have attained a higher level of education, have a lower unemployment rate, and earn higher total incomes.)

The VA has contributed significantly to changes in medical education. This is best seen in geriatrics. In the late 1970s, recognition of veteran demographics and the VA's case-mix experience[9] led to significant expansion of the training of medical specialists in geriatrics and gerontology. This VA "geriatric imperative" was a precursor of what became a major health issue facing the entire nation in the mid-1980s.

The VA's responses to the geriatrics issue included research and clinical practice initiatives, as well as educational efforts, in collaboration with academic health centers. These elements are especially well integrated in the VA's unique Geriatrics Research, Education and Clinical Centers (GRECCs). Ten of these centers of excellence in geriatric medicine are now in operation around the country (Bedford/Brockton–West Roxbury, Massachusetts; Durham, North Carolina; Gainesville, Florida; Little Rock, Arkansas; Minneapolis, Minnesota; Palo Alto, California; Seattle/American Lake, Washington; Sepulveda, California; St. Louis, Missouri; and West Los Angeles, California). Two more are awaiting funds for activation this fiscal year (Ann Arbor, Michigan, and San Antonio, Texas).

An additional VA academic approach to the geriatrics imperative began in 1978 with the establishment of a two-year fellowship program designed to develop a cadre of physicians committed to clinical excellence and capable of becoming local and national leaders in geriatrics. The program has been expanded. It now supports 30 new fellows annually at 20 sites, and graduate fellows are in leadership positions both inside and outside the VA system. Building on the success of the fellowship program, the VA established basic residency positions in geriatrics. The first group of 44 geriatrics residents was supported in the 1984–85 academic year, and the program is expected to reach 155 resident positions in academic year 1988–89.

The VA's academic medicine efforts have contributed to significant advances in geriatric medicine and to recognition of geriatrics as a subspecialty of internal medicine and family practice by the Accreditation Council for Graduate Medical Education.

Future Directions

The future of the VA's academic affiliation program will be determined by the extent to which it continues to serve the health care needs of veterans and simultaneously strengthens academic health center programs that directly benefit not only veterans but all citizens. Experience to date demonstrates a strong and continuing base of support for veterans' programs. This was shown again in passage of the cabinet status legislation (Public Law 100-527) by the House of Representatives and by the Senate, both without dissent.

If this support continues, the VA will maintain a stable base of support for undergraduate medical education, residency training, allied health education, preparation of clinical investigators, and the conduct of biomedical research. Program planning in the VA emphasizes these aspects of the affiliation program in the context of medical care needs of veterans.

As an example of such planning, a portion of the VA's academic affairs stipend funds is used as "venture capital," directed toward the development of capabilities in areas of defined need. A prime prospect for such development—through the establishment of fellowships and subsequent resident allocations—is ambulatory care. The VA will launch a new fellowship program in ambulatory care during fiscal year 1989, with the first 11 sites now selected (Bedford, Massachusetts; Brockton/West Roxbury, Massachusetts; Durham, North Carolina; Houston, Texas; Indianapolis, Indiana; Milwaukee, Wisconsin; Minneapolis, Minnesota; Salt Lake City, Utah; San Antonio, Texas; Seattle, Washington; and White River Junction, Vermont). Beginning 1 July 1989, 19 fellows working at postresidency levels will begin two-year fellowships at these centers, primarily in internal medicine settings. Each pro-

gram involves the VA and its academic affiliate.

Similar special educational emphasis also is being given to fellowships in spinal cord injury, substance abuse, dental geriatrics, and the Robert Wood Johnson Foundation Clinical Scholars and Health Policy Fellowships programs.

Research programs in such areas as AIDS, schizophrenia, and Alzheimer's disease will continue to be major areas for cooperation between the VA and affiliated academic medical institutions. AIDS Research Centers in Baltimore, Durham, Houston, New York, San Diego, and San Francisco are already operating. In the near future a third VA Research Center for Basic and Clinical Studies of Schizophrenia will be designated, joining those at Bronx, New York, and Palo Alto, California, in the effort to expand the amount of multidisciplinary research in that area.

Conclusion

The partnership created by the VA's program of affiliations with schools of medicine and allied health sciences has created a truly national resource. It is a "growth partnership" that is in good health and that continues to evolve to meet the needs of both parties.

Like the G.I. Bill, the VA–medical school affiliation represents a landmark initiative that not only accomplished its immediate purpose of providing the basic benefit of quality medical care to veterans in the post–World War II era but also has continued to serve society for 42 years. New opportunities will be created for this partnership by elevation of the VA to cabinet status and by the growing public awareness that it is essential to strengthen our national commitment to higher education and research. The VA and the academic health centers together contribute to the health and well-being of all Americans through this unique response to President Abraham Lincoln's call, in his Second Inaugural Address, "to care for him who shall have borne the battle, and for his widow and his orphan."

References

1. Lewis, Benjamin J. Veterans Administration Medical Program Relationship with Medical Schools in the United States. House Committee Print No. 170, 91st Congress, 2nd Session, 19 January 1970.
2. Cetina, Judith Gladys. *A History of Veterans' Homes in the United States, 1811–1930.* Ph.D. diss., Case Western Reserve University, 1977.
3. McKee, George H. (Lt. General, United States Air Forces, Retired Governor of the United States Soldiers' and Airmen's Home). Statement prepared for testimony before the Readiness Subcommittee of the Committee on Armed Services, House of Representatives, 100th Cong. 15 September 1988.
4. Williams, Ralph Chester. *The United States Public Health Service, 1798–1950.* Washington, D.C.: The Commissioned Officers Association of the U.S., 1951.
5. Williams, Greer. Boss Medicine Man. *Saturday Evening Post,* October 4, 1947.
6. Worthen, David M. The Affiliation Partnership between U.S. Medical Schools and the Veterans Administration. *Ala. J. Med. Sci.* **24**(1987):84–88.
7. Magnuson, Paul B. *Ring the Night Bell: The Autobiography of a Surgeon.* Boston, Massachusetts: Little, Brown & Co., 1960.
8. Gronvall, John A. Low Income Veterans in the VA Health Care System. *Health Aff.* **6**(Spring 1987):167–175.
9. Veterans Administration. *The Aging Veteran, Present and Future Medical Needs.* Washington, D.C.: Veterans Administration, 1977.

A Second Survey of Graduates of a Traditionally Black College of Medicine

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Abstract—To update and expand upon its 1975–76 survey of 729 graduates of seven classes, Howard University College of Medicine (HUCM) conducted a longer survey in 1985–86 of 1,985 graduates spanning 49 classes. Replies of the 728 respondents to the second survey confirm that HUCM's predominantly black alumni were continuing to provide patient care to a substantial number of poor blacks in urban areas. Fifty-six percent of all HUCM alumni were in primary care, compared with 46% of all alumni of U.S. medical schools who were in primary care. New findings included concerns about malpractice suits and physician impairment. Regarding physician supply in their own communities, 53% of respondents believed that there were too many physicians overall, but 63% believed there were too few black physicians. For the 1940–1969 graduates, loans financed 10% of their medical education, and indebtedness influenced the types of practice chosen by 4%; comparable figures for the 1970–1980 graduates were 25% and 11%. *Acad. Med.* 64 (1989):87–94.

In 1985–86 Howard University College of Medicine (HUCM) conducted a survey of its graduates to learn more about the practice characteristics of the college's alumni and to discover additional ways of improving the college's educational program. The survey was similar to one completed 10 years earlier.[1] While the original survey was limited to the graduates of seven classes and was based on a brief questionnaire, the second survey covered graduates of 49 classes and was based on a longer questionnaire.

Another purpose was to add to the limited information available about the practice patterns of black physicians. Although the second survey included HUCM graduates of all racial backgrounds, 83% of the respondents were black. Additionally, the second survey gave special emphasis to the experiences and opinions of HUCM's women graduates; the details of these findings and a review of research on female physicians are reported separately.[2] Brief preliminary comparisons of the practice patterns of the male and female respondents have been reported in the HUCM alumni newsletter.[3] Finally, it is hoped that this article will encourage other medical schools to conduct similar surveys.

There are two major published reports of the 1975–76 HUCM survey. The primary report[1] includes data about all 311 respondents from the classes of 1955, 1960, 1965, 1970, 1973, 1974, and 1975. The second report[4] focuses on the 252 black respondents and includes comparisons between the earlier (1955–1970) and later (1973–1975) graduates.

Information about graduates, by medical school of graduation, is available in periodic reports provided by the American Medical Association (AMA).[5] These reports, however, are limited to a small number of variables, such as sex, year of graduation, specialty, professional activity, and location. Race is not included as a variable. Some AMA data about all HUCM alumni as of 31 December 1985 are included in tables 1 and 2 of this article.

The general literature about minority-group health providers in the United States is growing but still limited. Approximately 20 references about black U.S. physicians from 1942 to 1976 were cited in our earlier article.[4] Among the most relevant publications on this topic since then are those by Bowman,[6] Koba Associates,[7] Sullivan,[8] Thompson,[9] and Yerby.[10] A 1988 report by Keith and colleagues[11] compared the 1975 black graduates of HUCM and Meharry Medical College School of Medicine with the black graduates of other U.S. medical schools and with nonminority graduates.

Since one aim of this article is to encourage individual medical schools to conduct and report the results of follow-up surveys of their alumni, it is appropriate to note that the literature includes studies by such medical schools as Harvard Medical School,[12] State University of New York–Upstate Medical Center (now called the State University of New York Health Science Center at Syracuse College of Medicine),[13] and the University of Washington School of Med-

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Table 1
Numbers and Percentages, by Graduating Classes, of All Living Alumni, of Those Alumni Polled in 1985–86, and of All Respondents and Black Respondents, Howard University College of Medicine

Graduating Classes	All Living Alumni*		1985–86 Survey†					
			Total Polled		Total Respondents		Black Respondents	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Before 1930	73	2.0	3	.2	1	.1	1	.2
1930–1939	171	4.6	6	.3	3	.4	3	.5
1940–1949	398	10.7	80	4.0	35	4.8	33	5.4
1950–1959	590	15.8	153	7.7	61	8.4	57	9.4
1960–1969	803	21.6	757	38.1	290	39.8	243	40.1
1970–1979	1,013	27.2	902	45.4	311	42.7	249	41.1
1980–1985‡	675	18.1	84	4.2	27	3.7	20	3.3
Total	3,723	100.0	1,985	99.9	728	99.9	606	100.0

*Source of data: Eiler, M. A., et al. *Medical Alumni, 1986 Edition.* Chicago, Illinois: American Medical Association, 1987, Table B-7.

†The survey covered all living male graduates with known addresses in the classes of 1940, 1945, 1950, 1955, and 1960–1980 and all living female graduates with known addresses through the class of 1980. Usable responses were returned by 37%. (Some percentages for totals are not exactly 100% because of rounding.)

‡Of these six classes, only the 1980 graduates were polled in the HUCM 1985–86 survey.

icine,[14] all with predominantly white student populations.

National trend data and "Delphi survey" predictions about all graduates of U.S. medical schools from 1950 to 2000 are available in *Physicians in the Making*,[15] which includes a separate chapter on women and minorities. An intensive follow-up of the graduates of 28 U.S. medical schools is available in a comprehensive longitudinal study of the Association of American Medical Colleges,[16] which traced over 1,800 individuals from 1956 to 1976. None of these individuals, however, attended predominantly black medical schools.

Method

With the help of a 13-member advisory committee of alumni, faculty members, and staff members, we developed an eight-page follow-up questionnaire. Although it was similar to the four-page, 26-item questionnaire used 10 years earlier, the 1985–86 version contained 60 items and placed special emphasis on the characteristics and experiences of women graduates.

The first 54 questions, which were directed to all graduates, pertained to background information, post-M.D. education, licensure and certification, geographical information, specialty information, choice of location and specialty, work setting, patient care, and miscellaneous career information. A final question for all graduates invited open-ended comments and suggestions. This was followed by five supplementary questions for women graduates only. (A copy of the questionnaire is available upon request.)

The 1985–86 survey covered all living male graduates with known addresses in the classes of 1940, 1945, 1950, 1955, and 1960–1980 and all living female graduates with known addresses through the class of 1980. Questionnaires were mailed, along with a cover letter from the dean, in May 1986. Reminder postcards were sent to nonrespondents in early July and duplicate questionnaires were sent in September. The alumni newsletter was used to inform graduates of the study, to solicit the participation of those surveyed, and to provide feedback reports to the respondents and other graduates.[3]

Table 1 shows that a total of 1,985 of the 3,723 living alumni were polled. Usable replies were received from 728 individuals, or 37% of those polled. Although this response rate was lower than the 49% of the 1975–76 survey, the number of respondents (728 versus 361) was over twice as great. The major reason for the lower response rate to the second survey was undoubtedly its greater length.

In addition to the deliberate oversampling of women, the 728 respondents to the 1985–86 survey differed from the 3,723 living alumni in at least the following ways: (1) the respondents were more apt to have graduated in the 1960s and the 1970s (see Table 1); (2) the respondents were more apt to be board certified (65% of respondents versus 39% of all alumni); and (3) the respondents were less apt to be providing primary care (see Table 2).

These differences should be kept in mind in interpreting the results that follow. Although this article emphasizes findings for the total group of 728 respondents, data are also presented in all tables for three subgroups: blacks, earlier (1940–1969) graduates, and later (1970–1980) graduates. Comparative data for all living HUCM alumni are reported in Tables 1 and 2; data for all graduates of U.S. medical schools are also presented in Table 2. To prevent the results of the oversampling of women from distorting the comparisons of the earlier and later graduates, the data for these comparisons are limited to those classes from which both men and women were fully polled.

Results

Of the 728 respondents, 560 (77%) were men. By self-description, 83% were black, 14% white, 2% Asian, and

Table 2
Percentages in Different Specialties of All Living U.S. Medical Graduates and All Living Graduates of Howard University College of Medicine (HUCM) as of 31 December 1985 and Percentages in Different Specialties of Respondents to a Survey of HUCM alumni in 1985–86

Specialties	Graduates as of 12/1985		Respondents to 1985–86 Survey‡			
	All U.S. Schools* (n = 378,453)	All HUCM Alumni† (n = 3,270)	Total (n = 687)	Black (n = 573)	Graduated 1940–1969 (n = 329)	Graduated 1970–1980 (n = 328)
Individual specialties						
Anesthesiology	3.7	2.3	3.9	3.3	4.6	3.4
Basic medical science	§	§	.3	.3	.6	§
Dermatology	1.6	1.8	2.5	2.6	4.0	1.2
Emergency medicine	2.4	1.6	1.9	1.7	1.2	2.7
Family medicine or general practice	14.1	16.7	12.7	13.6	13.1	12.2
Internal medicine						
General	18.7	18.7	9.2	9.5	8.2	9.5
Subspecialty	4.8	2.9	7.7	7.0	7.9	8.2
Total	23.5	21.6	16.9	16.6	16.1	17.7
Neurology	1.5	.8	.9	.3	1.5	
Obstetrics-gynecology						
General	§	§	8.4	9.4	7.3	10.1
Subspecialty	§	§	4.4	4.5	3.3	5.5
Total	6.3	12.4	12.8	14.0	10.6	15.6
Pathology	2.9	1.2	1.0	.8	.9	1.2
Pediatrics						
General	6.9	7.7	7.6	8.4	4.9	9.1
Subspecialty	.3	.1	1.9	1.7	1.8	1.8
Total	7.2	7.9	9.5	10.1	6.7	10.9
Physical medicine and rehabilitation	.5	.8	1.2	.8	1.5	.6
Psychiatry or child psychiatry	6.8	7.1	8.3	7.7	9.1	6.1
Public health or preventive medicine	.7	1.1	1.3	1.6	.6	1.8
Radiology	5.1	4.3	5.4	5.2	6.7	4.6
Surgery						
General	7.9	8.7	6.1	5.6	5.8	7.0
Ophthalmology	3.5	2.2	2.6	2.1	2.1	3.4
Orthopedic surgery	4.0	3.0	2.5	2.6	4.3	.9
Otolaryngology	1.6	.9	1.3	1.2	1.8	.9
Urology	1.8	1.9	1.5	1.7	1.8	1.2
Other surgical specialty	2.3	1.3	2.9	2.8	3.6	2.4
Total	21.1	18.0	16.9	15.9	19.4	15.8
Other specialty	2.7	2.3	2.9	3.0	2.4	3.0
Combination of specialties	§	§	1.7	1.6	2.1	1.5
Primary care specialties‖	46.0	55.6	42.2	45.5	36.8	46.4

*Source: Eiler, M. A., et al., *Medical Alumni, 1986 Edition.* Chicago, Illinois: American Medical Association, 1987, Tables A-2 and B-7. Numbers exclude 45,888 individuals: 12,100 whose specialties were unspecified; 32,405 who were not in active practice; and 1,383 whose addresses were not known. Numbers for the 1940–1969 graduates exclude 22 women from the classes where the men were not polled.

†Numbers exclude 453 individuals: 216 whose specialties were unspecified, 178 who were not in active practice, and 59 whose addresses were not known.

‡The survey covered all living male graduates with known addresses in the classes of 1940, 1945, 1950, 1955, and 1960–1980 and all living female graduates with known addresses through class of 1980. Usable responses were returned by 37%. Numbers exclude 6 with no specialty and 35 who gave no response to the question about specialty. Corresponding numbers for black respondents were 4 and 29; for 1940–1969 graduates, 3 and 19; and for 1970–1980 graduates, 2 and 8.

§Data are not available for this category.

‖Primary care defined as family medicine or general practice, general internal medicine, obstetrics-gynecology, and general pediatrics.

1% Hispanic. In terms of age, 24% were 39 years of age or younger, 41% were 40–49, and 35% were 50 or older. Gender and racial self-description data for the three subgroups—blacks, earlier graduates, and later graduates—are included in Table 3.

Fifty-one percent of the respondents had been married while in medical school, and 72% were married by the time they were in their internship or residency. At the time of the survey, 74% were married, 17% were separated, divorced, or widowed, and 9% reported they never had married. Of those with spouses, 15% were married to physicians, 46% to other professionals, 21% to homemakers, 9% to business persons, and the remainder to spouses in other occupations. Parental attitudes toward the respon-

Table 3
Percentages of Respondents with Selected Characteristics, Survey of Alumni of Howard University College of Medicine, 1985–86*

Characteristics	Total Respondents (n = 728)	Black Respondents (n = 606)	Graduated 1940–1969 (n = 350)	Graduated 1970–1980 (n = 338)
Women	23	26	14	24
Racial/ethnic background				
Black	83	100	85	80
White	14	0	11	18
Other	3	0	4	2
Source of school finances				
Self and family	60	58	72	47
Loans	17	18	10	25
Scholarships	21	22	16	27
Other	2	3	3	2
Debts affected career choices				
Location	8	8	4	12
Specialty	5	5	4	6
Type of practice	7	8	4	11
Practice type				
Solo practice	42	44	46	39
Partnership	8	7	8	9
Private group	14	12	15	14
Government	10	11	11	9
Academic health center	10	9	11	9
Military	3	3	2	5
Other	13	14	8	16
Impairment seen as problem				
When in medical school	47	46	34	63
When polled	65	65	63	68
Perception of physician supply in respondents' communities				
Too many total physicians	53	52	56	53
Too few black physicians	63	61	60	66

*The survey covered all living male graduates with known addresses in the classes of 1940, 1945, 1950, 1955, and 1960–1980 and all living female graduates with known addresses through the class of 1980. Usable responses were returned by 37%.

dents' becoming physicians were reported as generally favorable; more mothers (87%) than fathers (79%) had positively supported that career goal.

Training and Licensure

All but one respondent had completed an internship (first year of graduate medical education), and 92% had completed at least one additional year of residency training. Almost two-fifths of the respondents (38%) had received formal postgraduate fellowships or traineeships. Original licensure as a physician was on the basis of national board examinations for 46%, state board examinations for 40%, and the Federation Licensing Examination (FLEX) for the remaining 14%. Sixty-five percent of the respondents reported having specialty board certification.

Specialty Choice

As detailed in Table 2, over two-fifths (42%) of all the respondents were in a primary care specialty, with 13% in family medicine–general practice, 13% in obstetrics-gynecology, 9% in general internal medicine, and 8% in general pediatrics. Other popular specialties were surgery (17%), psychiatry (8%), and internal medicine subspecialties (8%). Of the 573 black respondents with known specialties, 46% were in primary care, a percentage slightly higher than that for all respondents. More of the 1970–1980 graduates than the 1940–1969 graduates (46% versus 37%) were in primary care.

Comparison of the specialty distributions in 1985 of all U.S.[5] and all HUCM graduates (see columns 1 and 2 of Table 2) reveals close similarities in most fields. The HUCM alumni, however, were substantially overrepresented in obstetrics-gynecology (12% of HUCM graduates versus 6% of all graduates), slightly overrepresented in family practice–general practice (17% versus 14%), and slightly underrepresented in internal medicine (22% versus 24%) and surgery (18% versus 21%).

Seventeen percent of the respondents reported having made substantial changes in specialization during their medical careers, and 91% were satisfied with their current specialties. In addition, 23%, including many in obstetrics-gynecology, reported changing the nature of their medical practices because of actual or threatened malpractice suits, rising costs of malpractice insurance, or both. These changes included moves to salaried positions, more screening of new patients, more tests, and more complete records. Other reasons for specialty

changes besides malpractice considerations were the search for more challenging work and the more predictable hours found in such fields as emergency medicine.

The most influential factors in the respondents' choices of their medical specialties included their interests (important to 86%), the intellectual challenge of the specialty (82%), the respondents' abilities (77%), the desire to serve a particular group of people (57%), financial considerations (57%), and working hours (57%). Among the least important factors were influence of classmates (20%), influence of spouse (25%), influence of house staff (31%), and preceptorship experiences (35%).

Practice Location

The most influential factors in the respondents' choices of their geographical locations included preference for a specific region of the country (important to 85% of the respondents), the general characteristics of the community (important to 78%), financial considerations (69%), desire to serve a particular group of people (67%), professional ties or contacts in the community (64%), best available opening (61%), and influence of spouse (47%). The least important factors were influence of classmates (important to 16%), influence of house staff (17%), preceptorship experience (20%), influence of faculty (22%), and recruitment by community (32%).

As shown in Table 4, approximately 60% of respondents practiced in or near large cities, with 27% of the total and 30% of the blacks working in the "inner city," or "ghetto," areas. Twelve percent of the later graduates worked in small cities, compared with 7% of the earlier graduates. Two-fifths of all the respondents (37%) had made substantial changes (of 50 miles or more) in the geographical locations of their practice sites, and 91% were satisfied with their practice locations at the time of the survey.

Professional Activities

Of time devoted by the respondents to professional activities, 75% was spent in patient care (69% in direct care, and 6% in indirect care, such as radiology), 11% in administration, 7% in teaching, 3% in nonmedical work, 2% in research, and 1% in other medical care. Although not directly comparable, the percentage of time devoted to patient care (75%) reported by the survey respondents was similar to the proportion (82%) devoted to such care by all HUCM alumni and by all U.S. medical school alumni whose major professional activity, as reported to the AMA,[5] was patient care.

Practice Type

Sixty-four percent of the respondents worked primarily in private practice, as shown in Table 3. This percentage comprised 42% in solo practice, 8% in partnership, and 14% in private group practice. Ten percent were in nonmilitary government service (7.5% state or local and 2.8% federal). Ten percent worked in academic health centers, 3% in the military, and 13% in other settings (4% in prepaid group practices, 3% in community health facilities, less than 1% in industry, and 5.5% in other medical environments).

Eleven percent of all respondents were employed by a health maintenance organization, but only half were on a full-time basis. Forty-two percent reported having a medical school appointment, with about 10% (72 of 728) being full-time faculty members.

Physician Supply

When asked their opinions about the overall supply of physicians in their communities, 53% of the respondents believed there were too many, 41% believed the supply was about right, and 6% felt there were too few. In considering the local physician supply in their specialties, 37% of the respondents felt there were too many, 50% felt the number was about right, and 13% felt there were too few. Regarding the supply of black physicians in their communities, only 7% of the respondents believed there were too many; 31% believed the

Table 4
Percentages of Respondents with Practices in Different-sized Communities, Survey of Alumni of Howard University College of Medicine, 1985–86*

Communities	Total Respondents (n = 681)	Black Respondents (n = 569)	Graduated 1940–1969 (n = 324)	Graduated 1970–1980 (n = 323)
Large city (500,000 or more)				
Inner city/ghetto	27	30	30	24
Other city area	23	23	24	21
Suburb	10	8	8	12
Total	60	61	62	57
Moderate size city (50,000–500,000)	27	27	27	26
Small city (10,000–50,000)	9	8	7	12
Small town (less than 10,000)	3	2	3	3
Rural area	1	1	1	1
Other	2	2	1	2

*The survey covered all living male graduates with known addresses in the classes of 1940, 1945, 1950, and 1960–1980 and all living female graduates with known addresses through the class of 1980. Usable responses were returned by 37%. Data in the table are limited to those individuals who responded to the question about location of practice. Numbers for the 1940–1969 graduates exclude 22 women from the classes where the men were not polled.

number was about right, and 63% believed there were too few. In considering their communities' supply of other minority physicians (for example, Hispanic and Asian physicians), 22% believed there were too many, 37% felt the number was about right, and 40% felt that it was too low. Comparable findings for the subgroups of black, earlier-graduate, and later-graduate respondents appear in Table 3.

Patient Characteristics

Among all respondents, 93% were providing medical care to patients, devoting a mean of 48 hours per week to this activity. Of their patients, over three-fifths (63%) were women, as shown in Table 5. Fifty-seven percent of their patients were black, 31% white, 9% Hispanic, and 3% of other races. Nearly half (49%) of their patients were 20–59 years of age, with the rest being evenly divided between those under 25 years of age (25%) and those 60 or over (26%). Recent graduates cared for a slightly higher proportion of white patients than did earlier graduates (33% versus 29%).

In terms of economic status, the respondents considered that 12% of their patients were well-to-do, 23% were comfortably well off, 31% were average, 17% were not very well off, and 18% were very poor. Patients of the black and the more recent graduate subgroups were reported as having a slightly lower economic status than that of patients for all 728 respondents. For all the respondents in private practice, 21% of their patients had their care financed primarily by Medicaid and 19% by Medicare. Most of their other patients were financed primarily by private insurance (32%) or from their own funds (19%).

Medical School Finances and Career Choices

Although the majority of the respondents' medical school financing had come from their families (30%), their own earnings and savings (25%), or their spouses' earnings (5%), a substantial portion also came from legally repayable loans (17%), service-obligated scholarships (12%), and non-service-obligated scholarships (9%). Educational debts played a significant role in the career choices of 8% of all respondents. As shown in Table 3, debts played a relatively larger role in the career choices of the 1970–1980 graduates than in those of the 1940–1969 graduates.

Career Motivation

When asked what proportion of their current motivation for working as a physician came from each of four specified sources, the respondents as a group reported that less than half was financial (43% to support one's self or family and 2% to supplement family income). The respondents as a group reported that more than half of their motivation was psychological, almost equally divided between serving others (26%) and deriving personal satisfaction from their work (29%).

Concerns about Impairment

The respondents indicated significant concern about medical student and physician impairment from drugs and alcohol. While in medical school, only 47% of all the respondents had be-

Table 5
Percentages of Respondents' Patients with Selected Characteristics, Survey of Alumni of Howard University College of Medicine, 1985–86*

Patient Characteristics	Total Respondents ($n = 728$)	Black Respondents ($n = 606$)	Graduated 1940–1969 ($n = 350$)	Graduated 1970–1980 ($n = 338$)
Sex				
Male	38	36	39	37
Female	63	64	61	64
Race/ethnicity				
Black	57	64	59	55
White	31	24	29	33
Hispanic	9	9	9	10
Other	3	3	2	3
Age				
Under 20	25	26	22	26
20–59	49	50	51	48
60 or over	26	24	28	25
Economic status†				
Well-to-do	12	10	13	10
Comfortably well off	23	23	24	21
Average	31	30	31	32
Not very well off	17	17	16	18
Very poor	18	19	17	18

*The survey covered all living male graduates with known addresses in the classes of 1940, 1945, 1950, 1955, and 1960–1980 and all living female graduates with known addresses through the class of 1980. Usable responses were returned by 37%. (Some percentages for totals are not exactly 100% because of rounding.)

†Status of patients as estimated by respondents.

lieved this to be a problem and only 3% had thought it a major problem. At the time of the survey, however, 65% believed it to be a problem, with 14% citing it as of major significance. Almost all (94%) believed there should be formal programs in medical schools to combat student and physician impairment, with 47% believing there is a major need for such programs. Only 34% of the 1940–1969 graduates had perceived physician impairment as a problem while they were in school, but 63% of them had perceived it as a problem at the time of the survey. Comparable findings for the 1970–1980 graduates were 63% and 68%.

Comments and Suggestions

A total of 176 (24%) of the respondents offered open-ended comments about their experiences as HUCM students and graduates and suggestions regarding how HUCM could educate its students better. As in our 1975–76 survey, the most frequent comment was that the College of Medicine should better prepare its graduates for the business side of medical practice. Several suggested that the college add instruction in medical jurisprudence and the organization of medical practice, including health maintenance organizations and preferred provider organizations.

Some commented on the excellent quality of instruction and mentoring provided by faculty members, while others made suggestions regarding the improvement of faculty-student relationships. Still others added comments regarding how to improve the curriculum and how to prepare students better for licensure examinations. Another frequent suggestion was that there be more counseling on the selection of residency, specialty, and practice locations. Many respondents expressed appreciation for the medical education afforded them by the College of Medicine and thanked the college for its excellent preparation.

Discussion

Like the respondents of the 1975–76 survey, approximately 60% of the 1985–86 respondents practiced in large urban areas, with almost 30% of them working in the inner city. Few had established their careers in small towns and even fewer in rural areas. Compared with graduates of other U.S. medical schools, a higher proportion of the HUCM alumni were in the primary care fields of family practice, general internal medicine, general pediatrics, and obstetrics–gynecology. Howard graduates also tended to be highly overrepresented in the field of obstetrics-gynecology, slightly overrepresented in family medicine, and slightly underrepresented in internal medicine and surgery.

The factors that most influenced the graduates' practice locations and specialty choices appear to have been external to their training experience and were closely related to their individual preferences and abilities. As in the 1975–76 study, the desire to serve a particular group of people — for instance, blacks — and preference for a specific region of the country were among the most influential factors in choosing both location and specialty. New questions asked in the 1985–86 survey, however, revealed that the respondents' interests were also very influential. About nine of 10 were satisfied with their locations and specialty choices. Personal satisfaction and service to others combined to outrank financial considerations as the motivation for working as a physician.

The data indicate that most Howard graduates were delivering patient care and working in diverse settings. The dominant mode of practice reported by these alumni, however, remained private practice. Three of every five of the respondents' patients were female. Blacks constituted 57% of the respondents' patients — down from the 65% reported by respondents in our 1975–76 survey. It appears that HUCM graduates have growing numbers of Hispanic and other minority patients (from 6% reported in the 1970s to 12% reported in the present survey); the reported percentage of white patients increased only 1%, from 30% to 31%.

There was a slight growth in the proportion of patients 60 years old or older, from 21% in 1975–76 to 26% in 1985–86. Although this rise may have been seen partly because more older physicians were polled in the later survey, it may also reflect the general aging of the American population.

The Howard medical alumni continued to see patients from a wide spectrum of family income levels. Although fully a third of their patients were poor or very poor, almost another third had average incomes, and the remaining third were above average to very well off. The black alumni served patients from a slightly lower socioeconomic status. Medicaid and Medicare combined to account for significantly less than half of the patient care financing for those respondents in private practice; private financing accounted for about half of all patient care income.

A little more than half of the respondents agreed with federal government estimates[17] of a physician oversupply, but less than 10% thought there were too many black physicians. Those who did think so may be black alumni who face economic competition from other black physicians in certain sections of cities, such as Washington, D.C., that have sizable populations of black physicians. A slightly higher proportion of the 1970–1980 graduates than of 1940–1969 graduates believed that there were too few black physicians. One possible explanation of this difference is that the younger alumni attended undergraduate and medical school during the civil rights movement, when the shortage of black physicians was strongly emphasized. A surprising 22% of all respondents thought there were too many physicians from other minority groups. Perhaps these are alumni who face economic competition from the growing Asian medical community.

Most respondents had not changed their medical practices in response to medical malpractice suits or threatened suits, but a substantial number had — especially in obstetrics-gynecology. Two-thirds of all respondents thought that physician impairment was a problem today, and almost all thought that attention to the problem

should be given in the medical school curriculum. These findings support medical school efforts to place greater emphasis on the topics of medical malpractice and physician impairment.

Sixty percent of the funds needed to finance the respondents' medical education had been derived from family resources or self-earnings. It appears that the educational debt of most respondents was relatively small. Most Howard medical students today, however, depend heavily on loans to finance their education. Moreover, comparative data suggest an increasing relationship between medical school indebtedness and career choice. Whereas only 10% of the medical school financing of the 1940–1969 graduates came from legally repayable loans, this was true for 25% of the financing of the 1970–1980 graduates. Similarly, only 4% of the earlier graduates reported that their educational debts significantly affected their choices of practice location, specialty, or type of practice, whereas comparable figures for the later graduates were 12% for location, 6% for specialty, and 11% for type of practice. Thus, both the portion of medical education financed by loans and the portion of those whose practice decisions were influenced by this debt were two and one-half times greater for the later graduates.

Most respondents reported career encouragement from both mothers and fathers. This finding, coupled with the finding that 30% of their medical education financing came from family resources, suggests that Howard medical students have had significant family support of their career aspirations.

Conclusion

Howard medical alumni are providing patient care to substantial numbers of poor blacks in urban areas. This patient care is in accord with current federal health policy priorities aimed at addressing the problem of inadequate health care for the poor and minority populations of this nation. The alumni are also serving significant numbers of whites and Hispanics, however. Their practices include individuals from all income strata. Although significant numbers are in primary care private practices, HUCM alumni are a diverse group and can be found in all specialties and in a variety of settings, including private offices, academic medical centers, research institutions, military installations, community health centers, and health maintenance organizations, and in governmental agencies throughout this country and, indeed, in many parts of the world. These findings are consistent with those of the 1975–76 survey and with the goals of the institution.

We hope that this article will add to the limited body of knowledge about the characteristics of alumni of a predominantly black medical school as compared with those of alumni of other U.S. medical schools. Given that 83% of the survey respondents were black, the study provides unique data about the practice patterns of black physicians. In addition, the comparative data about the earlier and later HUCM graduates may suggest fruitful directions for further research at individual schools and nationally.

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References

1. Lloyd, S. M., Jr., Johnson, D. G., and Mann, M. Survey of Graduates of a Traditionally Black College of Medicine. *J. Med. Educ.* **53**(1978):640–650.
2. Titus-Dillon, P. Y., and Johnson, D. G. Comparative Characteristics of Female Graduates of a Predominantly Black College of Medicine. Unpublished paper, Howard University College of Medicine, Washington, D.C., 1988.
3. Johnson, D. G. Highlights of 1985–86 Alumni Survey. *MedicAnnales* **71**(April 1988):3–4.
4. Lloyd, S. M., Jr., and Johnson, D. G. Practice Patterns of Black Physicians: Results of a Survey of Howard University College of Medicine Alumni. *J. Natl. Med. Assoc.* **74**(1982):129–141.
5. Eiler, M. A., Pasko, T. J., and Max, M. *Medical School Alumni, 1986 Edition.* Chicago, Illinois: American Medical Association, 1987.
6. Bowman, M. A. Specialty Choice of Black Physicians. *J. Natl. Med. Assoc.* **78** (1982):13–15.
7. Koba Associates. *The Treatment Practices of Black Physicians.* U. S. Department of Health, Education, and Welfare Publication No. (HRA) 80-628/G. Washington, D.C.: Government Printing Office, 1979.
8. Sullivan, L. W. The Status of Blacks in Medicine: Philosophical and Ethical Dilemmas for the 1980s. *N. Engl. J. Med.* **309**(1983):807–808.
9. Thompson, T. Selected Characteristics of Black Physicians in the United States, 1972. *J.A.M.A.* **229**(1974):1758–1761.
10. Yerby, A. S. Black Physicians and Black Communities. *Am. J. Public Health* **67** (1977):511–512.
11. Keith, S. N., Bell, R. M., and Williams, A. P. Affirmative Action in Medical Education and Its Effect on Howard and Meharry: A Study of the Class of 1975. *J. Natl. Med. Assoc.* **80**(1988):153–158.
12. Nadelson, C. C., Notman, M. T., and Lowenstein, P. The Practice Patterns, Life Styles, and Stresses of Women and Men Entering Medicine: A Follow-Up Study of Harvard Medical School Graduates from 1967 to 1977. *J. Am. Med. Wom. Assoc.* **34**(1979):400–406.
13. Boulton, D. A., and Johnson, D. G. Follow-Up Study of Medical School Alumni. *J. Med. Educ.* **45**(1970):442–446.
14. Adkins, R. J., et al. Geographic and Specialty Distributions of WAMI Program Participants and Nonparticipants. *J. Med. Educ.* **62**(1987):810–817.
15. Johnson, D. G. *Physicians in the Making: Personal, Academic, and Socioeconomic Characteristics of Medical Students from 1950 to 2000.* San Francisco, California: Jossey-Bass, 1983.
16. Erdmann, J. B. Jones, R. F., and Tonesk, X. *AAMC Longitudinal Study of Medical School Graduates of 1960: A 20-Year Effort in 28 Schools, 1956–1976.* Washington, D.C.: Association of American Medical Colleges, 1986.
17. Tarlov, A. *Summary Report of the Graduate Medical Education National Advisory Committee.* Vol. 1. DHHS Publication No. 81-651. Washington, D.C.: Government Printing Office, 1981.